

**Assam Power Generation Corporation Limited**  
Office of the General Manager, LTPS, APGCL, Maibella,  
P.O. Suffry, Dist. Sivasagar, Assam, Pin-785 689.  
e-mail: [gm-ltps@apgcl.com](mailto:gm-ltps@apgcl.com)  
Tele-Fax: 03772-254322

## **BID DOCUMENT**



### **TENDER NOTICE NO. 13 OF 2015-16 LTPS**

**Name of Work:**  
**MAJOR OVERHAULING OF GAS TURBINE UNIT NO. 2,  
MAKE-WESTINGHOUSE CANADA LTD. MODEL-W191G OF LTPS.**

Date of Pre bid discussion : 15:30 Hrs of 08/07/15.  
Last Date & Time of Receipt of Tender : Upto 15:00 Hrs. of 14/07/15  
Date & Time of Opening of Tender:  
(a) Technical Bid : At 15:30 Hrs on 14/07/15.  
(b) Price Bid : At 15:30 Hrs. on 22/07/15

Serial No. ....Date.....

Issued to .....  
.....  
.....

**Signature and Seal of the Issuing Officer**

**Price: Rs. 1,000/-  
(Rupees One thousand only) Non-refundable**

**(A) OBJECTIVE:**

Lakwa Thermal Power Station is a Gas Based Power Plant with total installed capacity of 157.2 MW. It has three power houses-Phase-I, II & III. Phase-I comprises of 04 nos of gas turbines (open cycle units) & Phase-II comprises of 03 nos. of gas turbines, running in closed cycle. The Gas Turbines of Phase-I Power House are: 03 nos. Westinghouse Canada Ltd. (WCL) make, model W191G, and 01 no. Make- Mitsubishi. Model-MW191G.

Presently, it is intended to undergo Major Overhauling of WCL make GT Unit no. 2 at Phase-I Power House of LTPS. The overhauling shall comprise of activities related to Mechanical, Electrical & Instrumentation works.

**(B) BRIEF DESCRIPTION OF THE WCL GAS TURBINE:**

It is an open cycle, Single Shaft Gas Turbine driving 15 MW generator through one reduction gear box. The starting mechanism of the turbine unit is a turbocharged six cylinder inline Diesel Engine which transmits initial rotating torque to the turbine through torque convertor, pneumatic clutch system and Auxiliary Gear Box. The Auxiliary components of the turbine consists of \_\_\_\_

- |                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| (a) Lube Oil Pump (MOP, AOP & EOP)                                           | = 03 nos. |
| (b) Lube Oil Cooler consisting of 02 nos. fans having Worm Gear mechanism    | = 01 no.  |
| (c) Lube Oil Filter                                                          | = 01 no.  |
| (d) Air Compressor (for air clutch & for pneumatically Operated instruments) | = 02 nos. |
| (e) Turning Gear Mechanism Torque Converter assembly                         | = 01 no.  |
| (f) Starting Diesel Engine (6-cylinder, in-line; Alis chalmer make)          | = 01 no.  |
| (g) Vapor Extractor Pump                                                     | = 01 no.  |

The Air Inlet System of Turbine consists of air filter house along with 154 nos. FAR-44 type filter elements, duct with silencer. The turbine exhaust system comprises of one duct with silencer and exhaust stack. The cooling system of the generator also consists of 30 nos. FAR-44 type filter elements.

The Generator is an 8 Pole generator with one brushless Exciter and a PMG.

**(C) INTENT OF SPECIFICATION:**

This tender specification is intended to furnish the technical specification/information related to the overhauling work of the Turbo generator Unit as well as to inform other commercial requirements to be furnished by the bidders along with their bid documents.

**(D) ELIGIBILITY OF BIDDER:**

**(i)** The bidder must have sufficient experience in the field of carrying out major overhauling works of Gas Turbine Generator. **It is preferred to have experience in executing WCL make similar Gas Turbine by the intending vendor.** Otherwise, the bidder must have the experience of successfully executed at least 05 nos. of Gas Turbine Overhauling works out of which at least 02(two) nos. should be during last 02(two) years. Documentary evidence for such past work (e.g. Work Order Copy and Work Completion Certificate) along with clients' comment in original or attested copy by Government officer regarding the performance of such overhauling works must be furnished in the technical part of the Bid, in absence of which the bidder's past experience in this regard shall not be taken into consideration. Further, the intending bidder must fulfill all the requisite clauses of tender.

**(ii)** The bidder must have to furnish sufficient financial capability for executing overhauling works. Bidder is to produce documentary evidence on carrying out of major overhauling work of GT worth Rs.1.0 (One) Crore in last 03(three) years with the technical bid.

(iii) In addition to clauses D (i) & D (ii), the bidder must have Net Profit during the last financial year. Audited balance sheet & profit and loss statements of last financial year (2014-15) must be furnished along with the technical bid. The actual financial capability of the bidder shall be assessed by APGCL during bid evaluation.

(iv) The bidder must be a single entity experienced firm or a partnership firm. In case of a partnership firm, the judicial agreement of the parent firm with the partnership firm has to be submitted in original. However, the parent firm shall have to satisfy the terms and conditions as laid down in the bid document as well as the terms of the experience criteria. Only the parent firm shall be responsible related to the terms and condition of the bid.

## **(E) GENERAL INSTRUCTIONS TO THE BIDDER:**

1) One set of Bidding document (Tender document) will be issued to intending bidder on submission of Rs. 1000/- (Rupees one thousand only) in the shape of Demand Draft duly pledged in favour of the **Asstt. Manager (Acct.), LTPS, APGCL, Maibella**. The Tender document may also be downloaded from the APGCL's website (www.apgcl.org) in which case the Tender fee has to be submitted along with the Technical Bid in the shape of Demand Draft duly pledged in favour of **Asstt. Manager (Accounts), LTPS, APGCL, Maibella**, payable at Lakwa TPP Branch, SBI, Maibella.

**Bidder shall submit tender document duly signed and stamped on each page of tender in token of his acceptance along with his bid.**

2) Page number in the bottom of the entire bid document is mandatory.

3) The bid shall be completed in two bid system as directed below:

- |                                           |                         |
|-------------------------------------------|-------------------------|
| (a) Technical & un-priced commercial part | - <b>Technical bid.</b> |
| (b) Priced commercial part                | - <b>Price bid.</b>     |

### **(a) Technical and Un-priced Part – Technical Bid:**

This part shall contain technical and commercial (Un-priced) bid and shall have to contain the following as mentioned below. This envelop shall comprise the signed copy of bidding document (Tender document), Drawings, Addendum (if any).

**Techno-commercial bid disclosing price shall be summarily rejected.**

- i) Bidding document (Tender document) and Earnest Money Deposit (EMD) in original and its details.
- ii) Power of Attorney in favor of authorized signatory of the Bidding document.
- iii) **Organization details –**
  - In case of a proprietorship firm, the name & address of the proprietor and attested copy of 'Certificate of registration of the Firm'.
  - In case of a partnership firm, attested copy of the partnership deed.
  - In case a company (whether private or public), attested copy of 'Certificate of Incorporation' together with attested Memorandum / Articles of Association.
- iv) Technical offer required as per bidding document.
- v) Any other relevant document, bidder desires to submit.

### **(b) Priced Commercial Part – Price Bid:**

Priced commercial part shall contain "**Offered Price**" dully filled in two copies i.e. one ORIGINAL COPY and one DUPLICATE COPY, shall be submitted. Priced part shall have to include all taxes and duties. No stipulation, deviation, terms and conditions, presumption, etc shall be stipulated in Priced part of bid. APGCL shall not take cognizance of any such statement and may at their discretion reject such price bids.

**(4) Pre bid discussion:** The bidder or their authorized agent (with documentary proof) may participate in the pre bid discussion. The clarification if any during the pre bid discussion from APGCL end will be minuted and will be a part of the bid document. The correction or modification in the pre bid discussion will be binding to all the bidders.

**(5) Submission of Bid:**

Technical & Un-priced and Priced part must be submitted in two separate **sealed** envelopes. The two sealed envelopes of both un-priced and priced parts shall have to be put to an outer cover which is also to be sealed. The outer cover should duly bear the Tender Number, date and time of opening of the bid along with address of the office.

**(a) Part-I: Technical and un-priced part:**

The envelope shall have following information clearly written on the outside of the envelope, failing which APGCL will assume no responsibility for the misplacement or premature opening of the bid.

*(Sealed Technical and un-priced part - Technical Bid)*

Tender Name : .....

Tender No : .....

Due date & time of opening : .....

Name & address of Bidder : .....

Note: Original Earnest Money Deposit (EMD) shall be enclosed in this part.

**(b) Part-II: Priced Part:**

This part of the bid shall contain the Price bid with Offered Price of the item filled in all respects and other information specially requested for submission of price part. The following information shall have to be clearly written on outside of the envelope, failing which APGCL will assume no responsibility for the misplacement or premature opening of the bid.

*(Priced commercial Part – Price Bid)*

Tender Name : .....

Tender No : .....

Due date & time of opening : .....

Name & address of Bidder : .....

Note: This part of Bid will be submitted in original plus one copy in duplicate.

**(6) Date, Time & Place of Submission:**

**(a)** Bid must be submitted by the due date and time mentioned in the Notice Inviting Tender or any extension thereof as duly notified in writing by APGCL at the following address. Address to which bids are to be sent (by Speed Post/Courier/Regd. Post/By Hand, etc):

(i) (By Speed /Registered Post): ***The General Manager, LTPS, APGCL, Maibella, P.O.-Suffry, Dist. Sivasagar, Assam, PIN-785 689.***

(ii) (By DTDC/Blue dart Courier):

***The General Manager, LTPS, APGCL, Maibella, P.O.-Suffry, Dist. Sivasagar, Sonari -785690, Assam. Phone: (03772-254322)***

**(b)** Bid received after the time and date fixed for receipt of bid is liable for rejection.

**(7) BID Opening:****(a) Opening of Techno-commercial & Un-priced Part of Bid:**

(i) On the date and time mentioned in 'Notice Inviting Tender', the Technical and Un-priced Commercial Part will be opened in the office of the General Manager, LTPS, APGCL, Maibella, P.O.-Suffry, Dist. Sivasagar, Assam, Pin-785 689.

(ii) In the event the specified date of bid opening is declared a holiday for APGCL, the bid shall be opened on the next working day at the specified time and location.

(ii) Clarification and Additional Information: During evaluation, APGCL may request bidder for any clarification on the bid, additional or outstanding documents. Bidder shall submit all additional documents in one original and one copy, duly signed. However, seeking clarification shall be on sole discretion of APGCL.

(iii) Bid of the bidder who submits the required EMD shall be taken up for detailed evaluation.

(iv) During pre bid discussion, Techno-commercial discretions with bidder shall be arranged. If needed, bidder shall depute authorized representative(s) for attending the discussion. The representative(s) attending the discussions shall produce authorization from the organization to attend the discussions and sign the minutes on behalf of the organization. The authorized representative(s) must be competent and empowered to settle all technical and commercial issues.

**(b) Opening of Priced part of the Bid:**

Price Commercial Part will be opened of only those bidders whose bids are considered Techno-commercially acceptable.

**(8) BID Evaluation Criteria:**

**Techno-commercial Part:**

(i) The Techno-commercial Part of bid shall be evaluated as per bid evaluation criteria stipulated below:

- (a) All necessary supporting documents in relation with experience and eligibility of the bidder. These include-Past Work Order & Work Completion Certificate copies, audited balance sheet and profit & loss statements and any other relevant document.
- (b) Acceptance of bidder to all scope of work along with other technical requirements of this tender.
- (c) Submission of completion work schedule with breakup of activities along with details of manpower engagement.
- (d) The bid must be accompanied with EMD as specified in the tender.

(ii) Deviation to critical stipulation:

Deviations to critical stipulations of bidding document as mentioned below are not acceptable. Bidder taking deviations to the following bid stipulations may not be considered for price bid opening.

- a. EMD.
- b. Warranty Clause.
- c. Performance Bank Guarantee.
- d. Firm Price.
- e. Payment terms.
- f. Compensation for delay (LD).
- g. Security Deposit.
- h. PAN, valid Sales Tax Registration Certificate, GRN/WC-II and valid Service Tax Registration Certificate.
- i. Experience/Eligibility Criteria.
- j. Acceptance to safety guidelines of this tender.

(iii) Bidders must ensure that complete bid along with all details as sought are submitted as per provisions of the bidding document.

(iv) Bid Rejection Criteria: The bids must conform to the specifications and terms and conditions of this tender. Bids shall be rejected in case the item (s) offered do not conform to the required minimum/maximum parameters stipulated in the technical specifications and to the respective international/ national standards wherever stipulated. Vendors would be qualified based on data and documents provided by them.

(v) If any of the clauses of the Bid rejection criteria/ Bid evaluation criteria (BEC/BRC) contradict the clauses of the General terms and conditions for tender of APGCL elsewhere, those in the BEC/BRC of this tender shall prevail.

**Price Part:**

The 'Offered Price' and its break up quoted by the bidder shall be taken up for evaluation on overall basis. **The price part shall have to include all kinds of supply of materials like consumables etc. as per the scope of work. The entire price offer shall be considered under composite work basis.** Price bids containing additional qualifications not mentioned in Techno-commercial Part of the bid shall be summarily rejected.

**(9) Owner's Right To Accept Or Reject A Bid:**

**APGCL reserves the right to accept a bid other than the lowest and to accept or reject any bid in whole or part, or to reject all bids with or without notice or reasons. Such decisions by APGCL shall bear no liability whatsoever consequence upon such decisions.**

**(10) Award of Supply:**

**(i)** The bidder whose bid is accepted by APGCL shall be issued Confirmed Order/Letter of Intent prior to expiry of bid validity. Bidder shall confirm acceptance by returning a signed copy of the Order within 10 (Ten) days from the date of issue of Confirmed order.

**(ii)** APGCL shall not be obliged to furnish any information / clarification / explanation to the unsuccessful bidders as regards of non-acceptance of their bids. Except for refund of EMD (without interest) to unsuccessful bidder, APGCL shall correspond only with the successful bidder.

**(11) Exceptions and Deviations:**

**EXCEPTION AND DEVIATION PROFORMA**

| Sl.No. | Ref of Bid Document |            | Subject | Deviations |
|--------|---------------------|------------|---------|------------|
|        | Page No.            | Clause No. |         |            |
|        |                     |            |         |            |

**NOTE:** Bidders are advised not to stipulate any deviation(s) / condition(s) and to confirm compliance to tender conditions in Toto. However, in the event of bidder seeking any deviation(s) other than the clause 9(a)(ii), the same should be submitted separately for commercial and technical sections strictly as per the format given above, otherwise, the same shall not be considered and it will be presumed that the bidder has accepted all terms and conditions of the tender.

Tender Name: .....

Tender No: .....

Signature: .....

Company Seal: .....

**(12) Location:**

The location of work shall be at Phase-I Power House of LTPS, APGCL, Maibella, Sivasagar, Assam, PIN-785 689.

**(F) SCOPE OF WORK OF BIDDER:**

**(1) Pre- Shutdown Activities**

- (a) Recording of various parameters of the gas turbine and analysis, study etc, if any, prior to starting of the overhauling works.
- (b) Mobilization of all equipment, materials and manpower.

**(2) Shutdown Activities:**

### **:MECHANICAL SECTION:**

**i) Major activities related to turbine opening, inspection and overhauling of main equipments.**

- a) Recording of readings such as Alignment, Clearances, Distances, etc in as found condition. ( As per OEM's standard format)
- b) Removal and Reassembling of Inlet and Exhaust covers, combustors with related piping.
- c) Positioning & Centering of turbine Exhaust Diffuser.
- d) Lifting & Removal of Turbine Top Cover.
- e) Reversing the Turbine top cover.
- f) Recordings of readings, as found, of turbine rotor, related to rotor such as blades, diaphragms, seals, etc. clearances all with respect to turbine casing as per OEM's recommendation in the standard format, issued from APGCL.
- g) Removal, repairing (if required) of Torque Tube Cover.
- h) Removal of Turbine Rotor.
- i) Removal, Replacement and Repairing (if required within permissible limit) of turbine blades and diaphragms as per OEM's recommendation with DPT/Zyglo penetrant test..
- j) Complete Checking, Cleaning of Rotor, Compressor blades, Diaphragms, air filter nets and all parts with DPT/Zyglo penetrant test.
- k) Removal of Transition pieces and Repair by TIG welding, re-doweling etc. wherever necessary/ replacement .
- l) Repairing / Replacement of Combustors along with its components such as Dome, Baffle, etc.
- m) Repairing/ Replacement of turbine casing, blades rings. If necessary, metal overlaying of worn-out turbine casing, ring by using special electrode and make it to finished level in both halves.
- n) Checking of nozzles status by DPT etc. /replacing, if necessary.
- o) Inspection, Repairing, replacement of Inlet/Exhaust duct, Expansion joint, Silencer, pipes, bleed box etc.
- p) Checking/ Replacing/ Repairing/ Scarping of Turbine main Journal Bearings ( Inlet & Exhaust) for any irregularities in babit layer and DPT/ magnetic particle test, etc. Checking blue contact/ clearance with rotor journal as recommended by OEM.
- q) Checking blue matching of thrust shoes & maintaining of axial clearance with filler rings.
- r) Zyglo penetrant/ Magnetic particle/ DP test of various welded joints.
- s) Checking/ cleaning/ greasing of turbine Trunion supports.
- t) Checking/ Repairing of Bleed Valve and its connected pipes and reassembling.
- u) Repairing/ Modification wherever necessary of complete insulation which includes ceramic fiber, etc.
- v) Inspection of Reduction Gear Box for measuring gear backlash both radial & axial, checking/ replacing bearings, cleaning, etc.

**ii) Activities related to auxiliary components:**

- a) Checking, repairing & cleaning of Lube Oil Cooling System, including Filter, Cooling Tower with fans, etc.
- b) Opening of Auxiliary Gear Box, Cleaning of Gear Box, etc. checking of bearing clearance and replacement of bearing, if necessary and reassembling.
- c) Opening of clutch element, cleaning, clearance checking/replacement, if necessary.
- d) Inspection, repairing of Lube Oil Pumps and replacement, if necessary, and reassembling.
- e) Complete overhauling of both the Air Compressors.

- f)** Unloading of Lube Oil from reservoir, cleaning of reservoir and refilling the same oil after centrifuging. Also, removal, modification of pipes, if necessary and reassembling.
- g)** Overhauling of Turning Gear/ Clutch with chain Sprocket Mechanism.
- h)** Overhauling of Vapor Extractor.

**(iii) Reassembling:**

After completion of removal, repairing, replacement and cleaning activities, APGCL's supervising engineer will allow for installation/reassembling of the turbine.

- (a)** Placement of journal bearings and seals etc.
- (b)** Placement of Compressor and turbine diaphragms, turbine rings etc.
- (c)** Placement of torque tube cover and seal (lower half).
- (d)** Placement of both journal bearings and turbine rotor.
- (e)** Checking of all clearances and to maintain the clearances within the allowable limit.
- (f)** Placement of torque tube cover upper half along with seal.
- (g)** Placement of inlet bearing cover and adjustment of axial thrust clearance within recommended limit.
- (h)** Placement of turbine upper half.
- (i)** Tightening of all bolts as per sequence.
- (j)** Placement of Inlet & Exhaust covers & bolts and tightening.
- (k)** Checking of blade tip clearances of 1<sup>st</sup>. row of Compressor blades and last row of turbines.
- (l)** Assembling of Auxiliary gear box and Air clutch element.
- (m)** Main gear box to Turbine alignment (MGB-TB).
- (n)** Turbine to Auxiliary Gear Box alignment.(TB-AGB).
- (o)** Main oil pump & Starting diesel engine alignment with respect to AGB.
- (p)** Main gear box to Generator alignment & Exciter to PMG alignment.
- (q)** Refitting of all pipes with new gaskets, jackshafts/each shaft covers.

**\*\*Special Note:** Bidders are to note that in case turbine ring repairing is necessary, special welding electrode/filler rod (recommended by LTPS, APGCL) is to be used for welding/repairing/overhauling of the entire ring portion (max. three rows). Further, repairing of any hot section parts, if necessary, only APGCL's recommended electrode shall have to be used which will be intimated to the successful bidder well in advance.

## **:ELECTRICAL SECTION:**

### **GENERATOR**

**(i) Disassembly**

1. Removal of 11KV MCB/Isolator panel by removing 11KV cable termination.
2. Removal of Exciter stator & PMG assembly from base mounting after proper recording of initial necessary measurements such as Axial & Radial position w.r.t stator, Foundation benchmark etc.
3. Removal of generator end belts.
4. Recording of initial reading for Axial & Radial position of Generator Rotor with respect to Gen. Stator & entering in recommended data sheet prior to removal of Generator Rotor.
5. Removal of pedestal bearing cover checking of clearance, base insulation resistance measurement.
6. Removal of generator coupling, pre alignment check and recording of reading and removal of coupling bolts.
7. Removal of Generator rotor and preservation with necessary care to avoid dampness and other possible damages.

**(ii) Cleaning and Inspection**

**(a) Stator**

- (i) Cleaning and Varnishing of winding and core. Cleaning of end covers and air tight re- fitting including necessary re-conditioning work.
- (ii) Checking of Stator core looseness/Slot wedge movements/ condition of teeth/rusting, etc.
- (iii) Visual inspection of ventilation passages for any blockages.
- (iv) Check tightness of overhangs and Inspection of overhangs bracings and tying.
- (v) Visual inspection of slot discharges.
- (vi) ELCID test of Stator Core.
- (vii) Checking of RTDs and Space Heater healthiness.
- (viii) Measurement and necessary improvement of IR & PI of stator winding upto recommended values.
- (ix) Preservation of Stator with electrical procedure till completion of mechanical works or till the time of placement on skid.

**(b) Rotor**

- (i) Rotor cleaning, inspection & varnishing.
- (ii) Visual inspection of journals and polishing.
- (iii) Conducting of Ultrasonic and DP test on retaining rings/journals and fan blades.
- (iv) Checking of worn-out surfaces due to labyrinths/scraper.
- (v) Visual inspection of rotor slot emerging faces and ventilation holes blockages.
- (vi) Checking and locking of all rotor plugs and balancing weights.
- (vii) Varnishing of rotor with Becktol Red.
- (viii) Measurement and necessary improvement of IR of rotor to recommended values.
- (ix) Preservation of Rotor with electrical procedure till completion of mechanical works or till the time of placement on skid.

**(c) Neutral Grounding Transformer**

- (i) Removal of Neutral Grounding Transformer, cleaning, checking its healthiness and reassembling.

**EXCITER**

- (i) Checking of DC connecting leads.
- (ii) Inspection of Yoke and Armature.
- (iii) Inspection of Permanent Magnet Generator (PMG), QA coils, main poles and its locking.
- (iv) Checking of Rotating Diodes.
- (v) Cleaning, varnishing and performing electrical tests such as insulation resistance of Exciter Stator & Rotor etc.
- (vi) Preservation of Exciter with electrical procedure till completion of mechanical works or till the time of placement on skid.

**(iii) Reassembling:**

1. Installation of Rotor and checking and correcting all necessary measurements and Installation of End covers.
2. Placement of pedestal bearing, checking of clearance, measurement of electrical resistance.
3. Complete assembling of Exciter maintaining all the parameters.
4. Installation of PMG maintaining recommended coupling flange to flange end gap.
5. Installation of 11KV breaker, Isolator module, Cable termination etc.
6. Painting of Generator, Exciter and PMG.
7. Clean up, visual inspection, pre-test and start up checks.

## **INSTRUMENTATION SECTION**

- (a) Removal, testing/calibration and re-fitting of all field instruments shall have to be carried out by the Contractor. These include calibration check & correction of pressure & temperature switches, pressure & temperature gages, pressure transmitters, etc. Healthiness check of limit switches, speed & vibration probes. Checking up of all thermocouples in temperature oil bath calibrator and comparing the readings with the temperature reference table for correctness.
- (b) Calibration check of all gas fuel control valves.
- (c) Calibration of control valves (Smart transmitter).

### **(i) Post assembly activities:**

- a) After completion of all assembling activities, turbine oil is to be refilled through centrifuging either by-passing all bearings or by insertion S.S wire mesh to all bearing inlet line.
- b) Turning Gear operation, cranking of starting.
- c) Full speed no load test with monitoring of all parameters.
- d) Full load performance test related to overhauling activities for continuous 72 hrs operation. All parameters shall have to be within the recommended limit.  
**Rotor Balancing:** If necessary, trim balancing of turbine rotor may have to take up to maintain vibration level within acceptable level.
- e) **Any activities or works which is not covered in the above scope of work but requires to be carried out for the overhauling and commissioning purposes will also be under the scope of bidder without any extra cost involvement. All the works are to be performed to the full satisfaction of APGCL.**

### **(ii) Post Shut Down Activities:**

- a) Cleaning of entire Turbine/Auxiliary area as well as work place.
- b) **Report:** The bidder after completion and proper commissioning of the unit has to submit report (2 Sets) on detail overhauling activities with various clearances, parameters etc. along with two hard copies and one soft copy of the report to be submitted.

## **(G) EQUIPMENT, TOOLS ,MANPOWER AND CONSUMABLES:**

### **(i) BIDDER'S SCOPE:**

- a) All types of tools including lifting slings/ropes, machines, equipments, testing and repairing instruments, air compressors that will be needed for carrying out the complete overhauling. Bidder is to furnish details of equipments & machineries including tool list.
- b) All consumables such as waste Cotton, Markin cloth, Anti seize compound, detergent, cleaning oil, cleaning compound, DP Test chemical, gases, welding electrodes and filler rod, sealing compound, STP compound, M- seal, Lead wires of different sizes, Gaskets, etc.
- c) All consumables such as cleaning compound, varnish, anti-track paint etc.
- d) **Manpower:** Furnishing of complete man power strength with technical engineering supervisory staff to be furnished as per attached **Annexure-B**. The successful bidder is to furnish the detail particular of the manpower including engineering staff immediately after receipt of order. Complete bio-data with identity card of each manpower as per the list shall have to be furnished prior to start of work. Any deviation in manpower engagement from that of the original list shall be considered as violation of work agreement. At least one each Mechanical, Electrical and Instrumentation engineering personnel not below the rank of diploma engineering with sufficient experience shall have to be engaged during entire working period.

e) Compensation of equivalent value of components shall have to be borne by the bidder in case of any damage due to lack of knowledge, misappropriation, mishandling, etc.

**(ii) APGCL'S SCOPE:**

- a) LTPS will give shutdown notice of the unit three weeks ahead of the shutdown.
- b) Available technical literatures /service manual of OEM for proper guidance of overhauling procedure etc.
- c) Service of EOT crane.
- d) Special tools for turbine rotor lifting and generator rotor removal.
- e) Electrical power, water supply, air supply for pneumatic tools can be made available.
- f) Detail specification of various kind of cleaning compound, welding electrodes and filler materials.
- g) All spare directly related to the turbine and its auxiliaries.
- h) Guest House accommodation with one double seated room can be arranged on Chargeable basis. For skilled/ un-skilled labors, free area for hutment will be provided with necessary water supply & lighting facility. The Contractor will make makeshift arrangement for accommodation of his workers.
- i) Workshop facility will be provided, if required, on Chargeable basis.

- (H)** (i) The successful Bidder is to furnish complete work schedule along with details of manpower engagement within 10 days of issue of LOI/ Order.  
(ii) During the work execution, the Contractor shall have to submit daily work progress report to the site Engineer of APGCL.  
(iii) Final measurement results are to be recorded in the standard format of data sheet in the shape of technical report duly signed by the responsible officer of both party (Contractor & APGCL).A sample copy of such format is to be collected from the APGCL'S site engineer prior to start of the overhauling works for making required number of copies.

**(I) Warranty:**

The overhauling work shall have to carry Warranty against performance for a period of 06(six) months from the date of completion of the work. The completion of work shall be considered after successful completion of 72 hours trial run of the GT Unit. Free service shall have to be provided pertaining to any defect that may develop under normal running condition of the machine during the Warranty period.

**(J) Work Completion Period:**

Time of completion of the whole overhauling work shall be **30 (thirty) days** (from the 3<sup>rd</sup> day of the unit shut down i.e., after 48 hrs of the unit shutdown). The work completion shall be accepted if the GT unit runs at full speed no load with all operating parameters within the acceptable limit of OEM's guideline.  
However, particularly for repairing and welding of hot section parts and subject to extent of damage, extension of maximum **of 07 days** may be approved by LTPS, APGCL.

Liquidated damage due to delay in completion of overhauling work shall be levied as per the Liquidated Damage Clause of this tender

**(K) Terms of Payment:**

- (a) 10% payment of the total order value for 'mobilization purpose' shall be made by APGCL to the Contactor on submission of Bank Guarantee (of any Nationalized Bank) of equal amount by the Contractor. 80% payment of the order value shall be made after completion of overhauling work and satisfactory trial run of the GT Unit for 72 hrs, subjected to fulfillment of Performance Bank Guarantee Clause of the Tender. The balance 10% payment shall be made on furnishing of Major Overhauling report by the Contractor and on issue of work completion certificate by APGCL.

**Note:** The total order value as mentioned above shall be inclusive of all taxes & duties.

(b) The bidder shall submit the bills in triplicate for payment.

**(L) Earnest Money:**

EMD of Rs. 80,000/- (Rupees Eighty thousand only) in the shape of Demand Draft in original of any Nationalized Bank shall be submitted as Earnest Money, duly pledged in favour of the Asstt. Manager (Accts.), LTPS, APGCL. APGCL will refund the Earnest Money of the unsuccessful bidders directly to the bidders within a reasonable period of time without any interest. Our Banker is SBI, Lakwa TPP Branch

**(M) Performance Security deposit:**

On receipt of the formal work order, the successful bidder shall have to furnish a Performance Bank Guarantee for an amount equivalent to 10% of the total order value including taxes and duties as performance security. The Performance Security Deposit shall be valid upto 30 days beyond the warranty period.

**(N) Liquidated Damage:**

In case of failure of completing the job within the time of completion of work as referred in clause-J for the reasons attributable to the contractor, then Liquidated Damage @ Rs. 1,00,000/- (Rupees One Lakh) Only against each additional day [Maximum amount of Rs. 10,00,000/- (Rupees Ten Lakhs Only)] will be recovered from the contractor. The amount will be deducted from the 80% bill payable to the contractor after completion of overhauling work and satisfactory trial run of the GT Unit for 72 hrs.

**(O) Supervision & Inspection:**

The Work shall have to be completed to full satisfaction of APGCL and as per OEM's standard guidelines.

**(P) Safety/Insurance:**

The bidder is to take all safety measures during the working period. These include man and machinery safety as per industry statutory rule. Insurance of working personnel is mandatory and authentic document of insurance to be submitted to APGCL before starting of the work.

**(Q) Validity of the Offer:**

The Offer shall be valid for a period of **120** (one hundred twenty days) from the date of opening of the technical bid.

**(R) Arbitration Clause:**

Any clause not included in the above shall be governed by "General Conditions for Supply and Erection of APGCL".

**(S) Force majeure:**

The terms & conditions mutually agreed upon with respect to this agreement shall be subject to Force majeure. Neither the contractor nor APGCL shall be considered to be in default in the performance of their obligations constrained therein, if such performance is prevented or delayed or restricted or interfered with by reason of War, Hospitalities, Revolution, Civil commotion, Strike, Epidemic, Accident, fire, Cyclone, Storm, Flood, Earthquake, Regulation or ordinance or Requirement of any Govt. or any Sub-division thereof, or Authority or Representative of any such Govt. and / or due to Technical snag/Reasons, or any other act whatsoever, whether similar or dissimilar to those enumerated, beyond reasonable control of the parties thereto, or because of any Act of God. The party so affected, upon giving prompt notice to the other party, shall be excused from such performance to the extent of such prevention, delay, restriction or interference for the period it persists, provided that the party so affected shall use its best effort to avoid or remove such causes of non-performance, if possible, and shall continue performance hereunder with the utmost dispatch whenever such causes are removed. Should one or both parties be prevented from fulfilling their contractual obligations by a state of force-majeure lasting continuously for a period of those months, the two parties to the contract shall meet and decide about the future course of action for implementation of the contract.

Any clause not included in the above shall be governed by "General Conditions for Supply and Erection of APGCL." The undersigned reserved the right to accept or reject any or all of the bids without assignee any reason thereof. He is not bound to accept the lowest rate also.

**(T) Jurisdiction:**

Subject to arbitration clause, all questions, disputes of differences arising under out of or in connection with the contract shall be subject the exclusive jurisdiction of Courts of Guwahati.

**The undersigned reserves the right to accept or reject any or all of the bids without assigning any reason thereof. He is not bound to accept the lowest rate also.**

**Further, any bidder who has failed to execute past overhauling (MI) job of GT of APGCL within the stipulated schedule period may not be considered in bid evaluation.**

**Enclo: Annexure- A & B**

**General Manager,  
Lakwa Thermal Power Station,  
APGCL, Maibella.**

**ANNEXURE – A****TECHNICAL BID**

The bidders are requested to ensure that the following points/aspects in particular have been compiled within their offer failing which the offer is liable to be rejected.

1. Please tick (✓) the box, whichever is applicable, and cross (X) the box(es), whichever is/are not applicable (NA).
2. Please sign on each sheet.
3. This "Bid Information Sheets" duly filled in must be submitted along with the offer.

**(A) COMMERCIAL**

1.0 Whether requisite tender fee has been paid?

|     |    |    |
|-----|----|----|
| YES | NO | NA |
|-----|----|----|

2.0 If so, furnish the following

- i) Demand Draft no. & date: .....
- ii) Name of the Bank: .....
- iii) Value: .....
- iv) Period of Validity: .....

3.0 Earnest Money Deposit (EMD):

- i) Whether requisite EMD has been enclosed?

|     |    |    |
|-----|----|----|
| YES | NO | NA |
|-----|----|----|

- ii) If yes, furnish the following

- a) Name of the Bank: .....
- b) Value: .....
- c) Name: .....
- d) Date of Issue: .....
- e) Period of Validity: .....

4.0 Whether the period of validity of the offer is as required in the tender document?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

5.0 If not, mention the extent of variation:  
(You can use extra sheet also)

|                     |
|---------------------|
| Extent of variation |
|                     |

6.0 Has the bidder given the details of parties to whom the bidder has offered service

|     |    |    |
|-----|----|----|
| YES | NO | NA |
|-----|----|----|

7.0 Is the offer being sent by Regd. Post, Courier Services or proposed to be dropped in Tender Box?

Sent by Regd. Post

|     |    |
|-----|----|
| YES | NO |
|-----|----|

Sent by Courier Services

|     |    |
|-----|----|
| YES | NO |
|-----|----|

Dropped in Tender Box

|     |    |
|-----|----|
| YES | NO |
|-----|----|

8.0 Has it been ensured that there is no overwriting in the tender? Have corrections been properly attested by the person signing the tender?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

9.0 Has the tender been prepared in sufficient details clearly so as to avoid post tender opening clarifications?

|     |    |
|-----|----|
| YES | NO |
|-----|----|

10.0 Acceptance of the following clauses in to:

i) Guarantee clause:

|     |    |
|-----|----|
| YES | NO |
|-----|----|

ii) Performance Bank Guarantee clause:

|     |    |
|-----|----|
| YES | NO |
|-----|----|

iii) Terms of Payment clause:

|     |    |
|-----|----|
| YES | NO |
|-----|----|

iv) Delivery Period including Liquidated damage clause:

|     |    |
|-----|----|
| YES | NO |
|-----|----|

v) Arbitration clause:

|     |    |
|-----|----|
| YES | NO |
|-----|----|

vi) Security Deposit:

|     |    |
|-----|----|
| YES | NO |
|-----|----|

### (B) BIDDER'S PAST WORK PROFORMA

| SL. NO. | NAME AND ADDRESS OF CLIENT(S) | BRIEF DESCRIPTION OF WORK | ORDER VALUE | REMARKS |
|---------|-------------------------------|---------------------------|-------------|---------|
|         |                               |                           |             |         |

**NOTE:** Certificate from client to be enclosed along with the above proforma. (Use separate sheets if required)

***Signature and Seal of the Bidder***

**PRICE BID**

1. Tender No.: .....
2. Tender Name:.....
3. Due Date: .....
4. Validity of the Bid: .....
5. Delivery Period:.....
6. Payment Terms: .....

| Sl. no. | Particulars                    | Major Overhauling Work          |                                  | Remarks |
|---------|--------------------------------|---------------------------------|----------------------------------|---------|
|         |                                | Amount<br>(in figures)<br>(INR) | Amount<br>(in words)<br>(Rupees) |         |
| 1.      | Total Quoted Price of the work |                                 |                                  |         |
| 2.      | Taxes (if any)                 |                                 |                                  |         |
| 3.      | Other Charges (if any)         |                                 |                                  |         |
|         | <b>Total =</b>                 |                                 |                                  |         |

**Service Tax will be extra as per the prevailing rate**

**NOTE:**

1. The above prices shall be firm without any variation in any way till expiry of the offer validity period, i.e., **120 days** from date of technical bid opening.
2. Statutory charges which will not be borne by the bidder must specifically be indicated in the above format, failing which the bidder shall bear the same and APGCL will not be liable for payment of such charges.
3. Any increase in taxes & duties during the period until completion of work shall be extra.
4. Use additional sheets if required.

.....  
**Signature and Seal of the Bidder**

**TECHNICAL SCHEDULE-4**

PROFORMA FOR JOINT UNDERTAKING BY THE ACCOCIATE ALONG WITH THE PRIME BIDDER.

(To be Stamped in accordance with stamp act)

Ref. No..... Dtd.....

To,  
The Chief General Manager (Generation),  
Assam Power Generation Corporation Ltd.  
Bijulee Bhawan, Paltan Bazar,  
Guwahati-1, Assam.

Dear Sir,

In terms of Clause-- D entitled “**ELIGIBILITY OF BIDDER**” appearing in tender specification no.....for....., it is a condition precedent that the bidder as well as their associates shall jointly and severally undertake the responsibility for the successful performance of contract (herein after referred to as the contract) which is qualified for the award on the basis of the expertise of prime bidder and Associate. We,....., having our registered office at.....(herein after referred to as associate), which in turn shall include our successor, administrator, executor and assign and we, ....., having our register office at.....(herein after referred to as bidder or contractor) are held jointly and severally liable and bound un to (Name of owner) (herein after referred to as the owner, which expression shall include its successor, administrator and assign) for the successful performance of the contracts, including the overall responsibilities for the successful performance of the contacts for.....(Name of package) strictly in accordance with terms and conditions in the tender specification.

The associate hereby agrees to depute their technical experts from time to time to the Contractor’s works/Project Site as mutually agreed upon between the owner and the Contractor in order to discharge the Contractor’s obligations as stipulated in the contract and subsequent modification/Alterations of the contract from time to time. The bidder and the associate hereby agree that this undertaking shall be irrevocable and it shall form an integral part of the contract as may be entered upon by the bidder. The witness thereof the Associate and the bidder have, through their authorized representatives, set their hands and seals of this.

|                                                                                                                                                                                                                            |                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <p>.....day of.....200—</p>                                                                                                                                                                                                |                                                                                                                          |
| <p>Common seal of ..... has been<br/>Affixed in my/our presence Pursuant to the<br/>Board of Director's resolution<br/>*no.....dated.....</p> <p>Name.....</p> <p>Signature.....</p> <p>Designation: Company secretary</p> | <p>For Prime Bidder</p> <p>Name.....</p> <p>Signature.....</p> <p>Designation.....</p> <p>Common Seal of the company</p> |
| <p>Common seal of ..... has been<br/>Affixed in my/our presence Pursuant to the<br/>Board of Director's resolution<br/>*no.....dated.....</p> <p>Name.....</p> <p>Signature.....</p> <p>Designation: Company secretary</p> | <p>For Associate</p> <p>Name.....</p> <p>Signature.....</p> <p>Designation.....</p> <p>Common Seal of the company</p>    |
| <p>Authenticated by me....</p> <p>Signature with name and seal of Notary Public or Magistrate 1<sup>st</sup> Class</p>                                                                                                     |                                                                                                                          |
| <p>*Company Board of director's resolution intending participation in the bid and authorized signatory in consortium agreement as per technical schedule.</p>                                                              |                                                                                                                          |

**ANNEXURE – B****(To be submitted with Technical Bid)**

| <b>Sl. No.</b> | <b>Designation/ Trade</b>         | <b>Qualification</b> | <b>Quantity to be deputed</b> | <b>Remarks</b> |
|----------------|-----------------------------------|----------------------|-------------------------------|----------------|
| <b>1.</b>      | <b>Service Engineer (Mech.)</b>   |                      |                               |                |
| <b>2.</b>      | <b>Service Engineer (Elect.)</b>  |                      |                               |                |
| <b>3.</b>      | <b>Service Engineer (C&amp;I)</b> |                      |                               |                |
| <b>4.</b>      | <b>Rigger</b>                     |                      |                               |                |
| <b>5.</b>      | <b>Fitter</b>                     |                      |                               |                |
| <b>6.</b>      | <b>Grinder</b>                    |                      |                               |                |
| <b>7.</b>      | <b>Welder</b>                     |                      |                               |                |
| <b>8.</b>      | <b>Helper</b>                     |                      |                               |                |
| <b>9.</b>      | <b>Mechanic</b>                   |                      |                               |                |
| <b>10.</b>     | <b>Electrician</b>                |                      |                               |                |
| <b>11.</b>     | <b>Instrument Mechanic</b>        |                      |                               |                |
| <b>12.</b>     | <b>Any other Trade</b>            |                      |                               |                |
|                | <b>Total =</b>                    |                      |                               |                |

.....  
**Signature and Seal of the Bidder**